

SHREYDER, A. V.

1. Contact Corrosion of Magnesium Alloys and Protection Against It by Metallic and Oxide Coatings. A. V. Shreider (Zhur. Priklad. Khim., 1954, 27, (7), 735-756). — [In Russian.] Sh. carried out corrosion tests on Mg alloys ML-5 (Al 7.0, Mn 0.31%) and MA-1 (Mn 2.16%), coupled with cast Fe, 7 structural C steels, 4 stainless steels, Ni coating, Nimonic alloy EL-437 (Cr 22.13, Fe 4.10, Ti 2.68, Al 1.61, Si 0.61, Cu 0.60, Mn 0.42, C 0.09%, Ni remainder), Cu bar (Cu 99.7, C 0.02, Pb 0.016, Fe 0.01%), brass LS 50-1 (Cu 68.81, Pb 4.41%), Pb bronze BrS 30 (Pb 30.99, P 0.00%), leaded bronze BrOS-10-10 (Sn 0.03, Pb 10.42%), Al bronze BrAZhN-10-4-4 (Al 10.04, Ni 4.65, Fe 4.02%), P bronze BrOF-10-1 (Sn 10.37, P 0.87%), commercial Al AO (Al 99.7, Si 0.13, Fe 0.14%), Supremagallium V-11 (Mg 12.07, Si 0.17, Fe 0.11%, Al remainder), Silumin Al-4 (Si 10.31, Mn 0.42%, Al remainder), and Avial AK-6 (Cu 2.23, Si 0.97, Mg 0.68, Mn 0.68%, Al remainder), in 3% NaCl soln., fresh water (suspended solids 0.074, mineral residue 0.1050, SO₄ 0.0246 g/l, Cl trace, pH 7.2), and an indust. atmosphere. Specimens of the two metals to be tested, measuring 35 x 14 x 4 mm., were connected together 30 mm. apart, by a brass rod insulated from the soln. Results of the tests are tabulated in detail. Coupling with steel increased the loss in wt. (in g./cm.²/day) of ML-5 in fresh water from 3.17 to 10.06, and that in air from 0.18 to 0.35 (from 0.13 to 0.23 for MA-1), while in 3% NaCl soln. the H evolved was increased from 0.33 to 5.60 ml./cm.²/hr. and the corrosion occurred on all surfaces, whereas in the other two media it was quite localized. For ML-5 in 3% NaCl soln. at 19°-21° C., the mean relative rates of contact corrosion (K) when coupled with the stainless steels, Ni coating, Nimonic, Cu alloys, and Al alloys (taking K_{steel} = 1.00) were 0.8-1.05, 0.68, 0.90, 0.53-0.73,

and 0.54-0.73, resp. When coupled with ground, polished, and sand-blasted steel K = 1.00, 0.80, 1.10, resp.; carburizing the steel had little effect, but nitriding reduced the value of K to 0.87 in the case of a steel config. Al and Cr. In 0.5M NaCl, ML-5 alloy coupled with bare, magnetite-coated (blued), and phosphated steels, gave K = 1.00, 1.38, 0.40, resp.; phosphating also reduced the rates of attack in fresh water and 0.5M Na₂SO₄ soln. In 3% NaCl soln. at 15°-16° C., ML-5 alloy coupled with bare steel and steel coated with 20-μ thick layers of Zn, Cd, Sn, Pb, Ni, Cu, and Cr, gave values of K = 1.00, 0.20, 0.21, 0.19, 0.33, 0.68, 0.70, 0.21, resp. (In fresh water at 17°-21° C., the mean losses in wt. were 10.05, 5.73, 5.18, 4.99, 4.78, 6.02, 6.35, and 5.50 g./m.²/day). Anodic coatings on Al and its alloys had little effect on the corrosion of Mg alloys in contact with them in NaCl soln., but reduced the attack in fresh water and air, to an extent dependent on the sealant used for the coating. The effect of 13 protective processes (2 selenite, 6 chromate, 1 fluoride, 3 fluoride/chromate, and 1 fluoride/chromate/phosphate processes) for the Mg was studied; taking corrosion resistance, change in dimensions, and surface cleanliness into account, process MFKh-1 (5 min. in 13.3% HF at room temp., then 45 min. in boiling 16% K₂Cr₂O₇ soln., pH 4.0-4.4) was best. The protection could be increased by sealing the dark protective film with spindle oil. The selenite processes did not protect Mg alloys from corrosion in fresh water or air, the film of MgSe on the metal being converted into Se, so that microcells were set up and the corrosion increased. The rate of contact corrosion depends on the overvoltage of the depolarization reaction at the cathode, the passivity of the film on the Mg surface, and on the internal and external resistances in the galvanic circuit. — O. V. E. T.

SHREYDER, A V

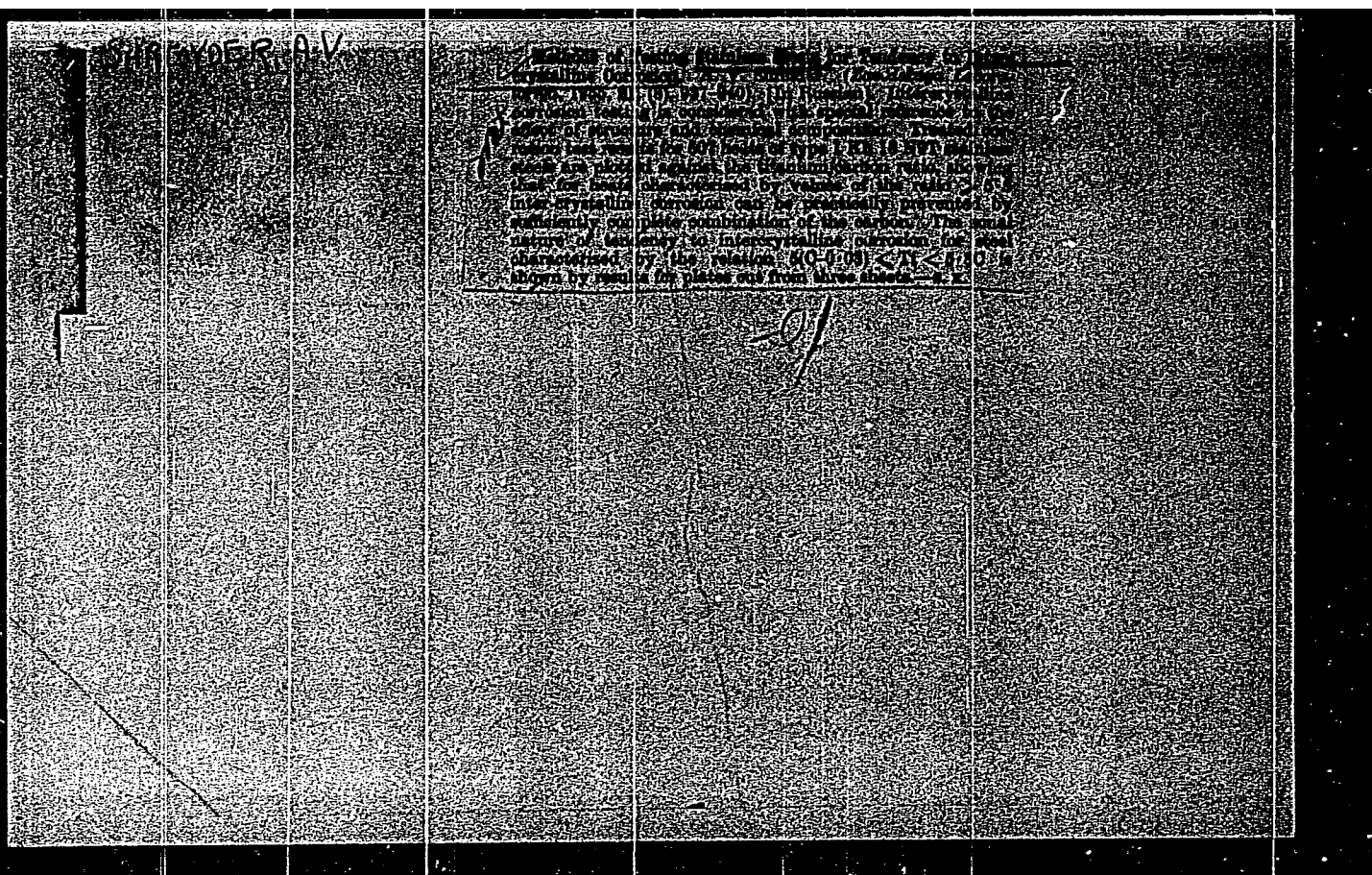
✓ Methods for the evaluation of the tendency of stainless
steels to undergo intercrystalline corrosion. A symposium.
Discussion of methods of determination of the tendency of
stainless steels to undergo intercrystalline corrosion. I. A.
NG Levin. *Zavol'skaya Lab.* 21, 546-50 (1955).—A review, with
27 references. Foreign practice of control determinations
of the tendency of stainless steels to undergo intercrystalline
corrosion. A. V. Shreider. *Ibid.* 551-6.—A review.
Methods for the determination of the existence of inter-
crystalline corrosion in stainless-steel apparatus. I. L.
Rozenfel'd, A. A. Vrutsevich, and M. V. Bezanson. *Ibid.*
557-9.—A flat surface of the app. is ground with an emery
wheel and the grooves produced examined under a magnifica-
tion of 75-180 times. Only longitudinal grooves are seen
in the absence of corrosion, but they are crisscrossed with
cracks when there is intercryst. corrosion. W.M.S.

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SHREYDER, A-V

✓ A gravimetric evaluation of dimensions of anodized pieces.
A. V. Shreyder. *Zavodskaya Labi* 21, 716-17 (1955).
C Anodic oxidation converts some of the Al to Al_2O_3 oxide, with
H a partial soln. of the metal oxide formed; and hydrates the
oxide film formed, and as a result the size of the pieces may
be either increased or reduced by the treatment. The
changes of dimensions are too small for optical evaluation.
A gravimetric method is described, based on the weighing
of the sample (to within 0.0001 g.) before anodizing, after
the treatment, and after the soln. of the oxide film. Good
results in removing the film are obtained at 80-91° with a
soln. contg. 20 g. Cr_2O_3 and 35 ml. H_3PO_4 (47 gr. L.G.) for
20 min. The method is being used with a no. of Al alloys.
W. M. Sternberg

MS 24



SHREYDER, A.V.

Subject : USSR/Chemistry AID P - 3492

Card 1/1 Pub. 152 - 7/21

Author : Shreider, A. V.

Title : Some characteristics of intercrystalline corrosion of austenitic stainless steel

Periodical : Zhur. prikl. khim., 28, 6, 608-615, 1955

Abstract : The zonal tendency to intercrystalline corrosion of various steels was studied. The grain size and the Ti:C ratios of the YalT steel are discussed, and a minimum Ti:C ratio of 5.8 suggested. Five diagrams, 11 references, 9 Russian (1945-1954).

Institution : None

Submitted : N 9, 1953

SHREYDER, A.V.

KHALETSKIY, Nikolay Mikhaylovich, inzhener; UDAL'TSOV, A.N., glavnyy redaktor; SHREYDER, A.V., kandidat tekhnicheskikh nauk, redaktor

[Semiautomatic instruments for measuring the thickness of the cathode coating on electronic instruments] Poluavtomaticheskii pribor dlia izmereniia tolshchiny pokrytiia katodov elektronnykh priborov. Tema 9, no. P-56-430. Moskva, Akad. nauk SSSR, 1956.
9 p. (MIRA 10:4)

(Measuring instruments)

SHREYDER, A.V.

AZHOGIN, Fedor Fedorovich, kand.tekhn.nauk; SHREYDER, A.V., kand.tekhn.
nauk, red.; UDAL'TSOV, A.N., glavnyy red.

[Local oxidation of magnisium alloys] Mestnoe oksidirovanie
magnievyykh splavov. Moskva, In-t tekhniko-ekon.inform., 1956. 13 p.
(Informatsiia o nauchno-issledovatel'skikh rabotakh. Tema 23,
no.1-56-11) (MIRA 11:2)
(Magnesium alloys) (Oxidation)

GAKMAN, Emma Lvovna; RAGAZINA, M.F., inzhener, vedushchiy redaktor;
~~SHREYDER, A.V.~~ kandidat tekhnicheskikh nauk, redaktor; PONOMAREV,
V.A., tekhnicheskiiy redaktor

[Zinc plating of parts] Diffuzionnoe tsinkovanie detalei. Moskva,
Akad.nauk SSSR, 1956. 15 p. (Informatsiia o nauchno-issledovatel'-
skikh rabotakh. Tema 24, no.I-56-207) (MLRA 10:10)
(Zinc plating)

SHREYDER, Aleksandr Viktorovich, kandi.tekhn.nauk; UDAL'TSOV, A.N., glavnyy
red.; ZARETSKIY, Ye.M., kand.tekhn.nauk, red.

[Controlling corrosive disintegration of brass pipes] Bor'ba
korroziionnym rastreskivaniem latunnykh truboprovodov. Moskva,
In-t tekhniko-ekon. inform., 1956. 19 p. (Informatsiya o nauchno-
issledovatel'skikh rabotakh. Tema 23, no.I-56-5) (MIRA 11:2)
(Brass--Corrosion) (Pipe)

KOSHELEV, Grigoriy Grigor'yevich; KIARK, Gel'ma Brunovna; UDAL'TSOV, A.N.,
glavnyy red.; SHREYDER, A.V., kand.tekhn.nauk, red.

[Practices of protecting marine installations of the petroleum
industry from corrosion by means of protective devices] Opyt
zashchity morskikh neftepromyslovnykh sooruzhenii ot korrosii
s pomoshch'iu protektorov. Moskva, In-t tekhnikoOekon.inform.,
1956. 21 p. (Informatsiia o nauchno-issledovatel'skikh rabotakh.
Tema 23, no.I-56-140) (MIRA 11:2)

(Corrosion and anticorrosives)

(Petroleum industry--Equipment and supplies)

SHREYDER, A.V.

BOBYLEV, Aleksey Vasil'yevich; TOMASHOV, N.D., professor doktor, retsentsent;
TURKOVSKAYA, A.V., kandidat tekhnicheskikh nauk; SHREYDER, A.V., redak-
tor; ARKHANGEL'SKAYA, M.S., redaktor; MIKHAYLOVA, V.V., tekhnicheskii
redaktor.

[Disintegration of brass caused by corrosion] Korrozionnoe rastreski-
vanie latuni. Moskva. Gos.nauchno-tekhn. izd-vo lit-ry po chernoi i
tsvetnoi metallurgii, 1956. 120 p. (MLRA 9:5)
(Brass--Corrosion)

SOV/137-57-6-10856

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 6, p 207 (USSR)

AUTHOR: Shreyder, A.V.

TITLE: Erosive Wear of Metals and Protection by Coatings (Eroziionnyy iznos metallov i zashchita pokrytiyami)

PERIODICAL: V sb.: Povysheniye iznosostoykosti i sroka sluzhby mashin.
Kiyev-Moscow, Mashgiz, 1956, pp 368-375

ABSTRACT: An examination is made of abrasive, erosive wear occurring when artificial gas flows are transmitted over metal surfaces at high velocities. Evaluation of the erosion life (EL) of materials is made on an instrument specially designed for the purpose (a schematic diagram of the instrument is presented). The major experiments are run under sand blast at 275 m/sec. The specimen is subjected to erosion at an angle of 45° at a nozzle distance of 180 mm. Weight-loss measurement is the method used to evaluate EL in hard metals and coatings, while for soft metals, in view of the fact that the sand particles are found to wedge into the surface layer, depth of destruction is measured by means of a thread micrometer with a sharp-tipped insert. The EL of Nr 20 steel is used as the standard of comparison.

Card 1/2

SOV/137-57-6-10856

Erosive Wear of Metals and Protection by Coatings

The erosion-protective properties of thin anode-oxide films are evaluated in terms of the time required for the oxide to be worn away. It is shown that the EL of materials cannot be established by determinations of hardness to indentation or scratch hardness, or by determination of resistance to frictional wear. This is explained by the fundamental differences between the mechanism of erosion and that of abrasion, deformation, and failure upon frictional wear and the impressing of an indenter. It is found that ordinary mild steel has greater EL than EYalT steel or Cu, Al, and Mg alloys. A significant increase in the EL of ferrous and nonferrous metals is attained by hard chromium plating and in that of Al alloys by thick anodizing. A study is made of the influence of the angle of impingement, the impact speed of the particles, the duration of erosive action, and the roughness of the metal surface upon erosive wear, and the mechanism of erosive destruction of hard and ductile metals is described. The proposed method of investigating the EL of materials makes it possible to arrive at an empirical determination of the relationship between erosive destruction and the factors indicated above, and to determine the relative EL of oxides produced by anodizing Al alloys in various ways. See RZhMet, 1957, Nr 1, abstract 1121.

L.G.

Card 2/2

SHREYDER, A-V

26
 ✓ Erosion wear of metals and its prevention with coatings
 A. V. Shreyder. *Fiz. Metal. i Metalloob.* Akad. Nauk
 S.S.S.R., *Ural. Filial* 2, No. 1, 181-8 (1961). Resistance
 to erosion was tested in an app. (described) in which sized
 sand was fed into a nozzle discharging compressed air at 40.
 to the surface of plate samples. Erosion was measured by
 weighing hard samples and measuring the thickness of those
 in which said particles could be imbedded in the surface.
 Cr-plated, anodized, and Ni-plated specimens were tested
 together with 8 alloys. No connection was found between
 erosion stability and the surface hardness of a substance.
 Erosion caused by impinging at a right angle or by scratching
 when sand passes at a low angle to the surface favors harder
 coatings in the 2nd case. I. D. Gai

of 8-m

Shreyder, A. V.

11342* Variation in the Fatigue Limits of Aluminum Alloys Under the Influence of Anodic Oxidation. On the influence of anodizing on the fatigue limits of aluminum alloys. (Russian) A. V. Shreyder, A. V. Blalobzheskii, Z. T. Zauritsenko, and B. V. Semakovich. Metallovedeniye i Obrabotka Metallov, 1956, no. 1, Apr. 1956, p. 14-20. Chromic acid anodizing increases endurance and strength. Investigation on the effect of sulfuric acid anodizing on fatigue limits, and effect of oxide coating thickness and polishing. Tables, graphs, micrographs, diagrams. 16 ref.

FIGEL'MAN, M.A.; SHREYDER, A.V.

Investigation of hydrogen embrittlement of steel. Zav.lab. 22 no.5:
586-588 '56. (MLRA 9:8)

(Steel--Brittleness)

SHREYDER, A.V.

Studying the kinetics of high-temperature oxidation by measuring
the electric conductivity of metals; abstract. Zav.lab. 22 no.10:
1207-1208 '56. (MLRA 10:5)
(Electric conductivity) (Metals) (Oxidation)

SHREYDER, A. V.

Notes ✓ **Wear-Resistance and Hardness of Electrolytic Chromium Coatings.** A. V. Shreider (Zhur. Priklad. Khim., 1959, 89, (1), 73-82) [In Russian]. Coatings of Cr, 60-80 μ thick, were electrodeposited on to steel specimens under various conditions from either a "universal" bath contg. CrO_3 , 260.75; H_2SO_4 , 2.56; Cr^{++} 3.20; Fe 2.45 g./l. or a "dilute" bath contg. CrO_3 , 151.18; H_2SO_4 , 1.64; Cr^{++} 1.88; Fe 1.59 g./l. To improve adhesion, the specimen was first held in the soln. for 5 min. and then anodically pickled at a c.d. equal to that used subsequently for plating. The specimen was held in a specially constructed fixture designed to ensure that a linear edge was produced. After electrodeposition, it was removed by heating for 90 min. in a vessel at 200° C., then for 60 min. in oil at 160° C. The microhardness (T) of the Cr deposits was determined 60-120 days after plating, using a PMT-3 apparatus; the wear resistance, 210-370 days after plating, by measuring the vol. of the hole produced after 1000 revolutions of a hard metal disc (30 mm. dia. \times 2.5 mm., 1000 r.p.m.) pressed on the surface, which was flooded with a 0.5% K_2CrO_7 soln. The results are given graphically. The values of T for deposits from the dil. baths at 65-75° C. were 10-20% greater than those from the universal bath at the same temp.; but at 34°-45° C. there was little difference. However, at the higher temp. the abs. magnitude of T was low for both baths. The max. observed values of T for the universal bath were for deposition at 20 amp./dm.² and 35° C. (1138 kg./mm.²), and at 60 amp./dm.² and 45° C. (1176 kg./mm.²); for the dil. bath, at 10 amp./dm.² and 35° C. (1200 kg./mm.²) and at 80 amp./dm.² and 55° C. (1186 kg./mm.²). The T /c.d. curves exhibited both max. and min. The deposits obtained at 35°-45° C. from each bath had about the same wear resistance, and this was practically independent of c.d. over the range 10-60 amp./dm.². The temp. had more influence, however, and with each bath the wear resistance was a bit lower for deposits obtained at 45° C.

Shridex, A. V.

With a further increase in temp. the wear resistance increased sharply, reaching a max. at 65-68° C. for the universal bath, then falling to low values at 75° C. With the diff. bath, there was no sharp fall in wear resistance over the temp. range 65-75° C. O.d./temp. diagrams are given showing that the conditions for obtaining deposits of high T (> 1000 kg./mm²) correspond roughly to the zone of transition from grey to bright deposit, while those for producing deposits of high wear resistance correspond roughly to the zone of transition from bright to milky deposits. All the coatings of high wear resistance had values of T within the range 875-925 kg./mm², so that the detn. of T can be used as a rapid method of obtaining an approx. evaluation of the wear resistance of a deposit. The observed data can be explained by considering the relation between the hardness of the Cr grains, the adhesion between them, and the nature of the cracks in the layers of electrodeposit. C. V. R. T.

2/2

USSR/Corrosion - Protection From Corrosion

J.

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 14101

Author : Shreyder A.V.

Title : Control of Corrosion Fissuration of Brass Collectors
of Liquid Fuel

Orig Pub : Zh. prikl. khimii, 1956, 29, No 7, 1044-1056

Abstract : Investigation of corrosion fissuration (CF) of brass
dollectors of liquid fuel, operating under pressure,
has shown that this damage is due not to action of fuel,
containing up to 0.13% sulfide S, but due to the action
of air contaminated with ammonia. Protection against
CF of brass (B) in copper-ammonia media by cadmium pla-
ting effected by a shift of the potential of B in the ne-
gative direction; as a result thereof a decrease occurs
in the tendency to adsorptive lowering of strength as
well as to a dissolution of B at the areas devoid of the
coating. Comparison of resistance to CF of brass 68 and

Card 1/2

- 9 -

SHREYER, A.V.

LEVIN, A.I.

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PHASE I BOOK EXPLOITATION

30V/1969

Akademiya nauk SSSR. Institut fizicheskoy khimii

Teoriya i praktika elektroliticheskogo khromirovaniya (Theory and Practice of Electrolytic Chromium Plating) Moscow, Izd-vo AN SSSR, 1957. 231 p. 5,000 copies printed.

Resp. Eds.: Vagrumyan, A.T., Professor, N.T. Kudryavtsev, Professor, and M.A. Shluger, Candidate of Technical Sciences; Ed. of Publishing House: Yegorov, B.G.; Tech. Ed.: Pavlovskiy, A.A.

PURPOSE: This book is for engineers, industrial workers, members of scientific research institutions and teachers concerned with modern methods of electroplating and the manufacture of corrosion-resistant metallic instruments.

COVERAGE: The collection contains sixteen reports and the texts of several discussions presented before the March 1955 Conference on the Theory and Practice of Chromium Plating, sponsored jointly by the Institute of Physical Chemistry, AS USSR, and the Moscow Scientific, Engineering and Technical Society for Instrument Making. The reports reflect the conference's aim of a wide exchange of opinion on problems of chromium electrodeposition and offer solutions.

Card 1/4

Shreyer, A. V. The Influence of Electrodeposition Parameters on the Hardness and Wear-Resistance of Chromium Platings

77

SOV/137-58-7-15452

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 218 (USSR)

AUTHOR: Shreyder, A.V.

TITLE: Influence of the Parameters of Electrolytic Deposition on the Hardness and Wear Resistance of Chrome Coatings (Vliyaniye parametrov elektroosazhdeniya na tverdost' i iznosostoykost' khromovyykh pokrytiy)

PERIODICAL: V sb.: Teoriya i praktika elektrolit. khromirovaniya. Moscow, AN SSSR, 1957, pp 77-96

ABSTRACT: The influence of the method of chrome plating on the micro-hardness (M) and wear resistance (W) of a chrome coating (CC) was studied. Chrome plating was carried out in a universal electrolyte (in g/l : CrO_3 250.75, H_2SO_4 2.56, Cr^{3+} 8.20, Fe 2.45) and a diluted electrolyte (in g/l : CrO_3 151.16, H_2SO_4 1.54, Cr^{3+} 1.88, Fe 1.52) at different temperatures (35-75°C) and cathode cd's (10-110 amp.dm²). The thickness of the CC was 50-60 μ . Before plating the surface of the specimen to be plated was polished and degreased with B-70 benzene. To ensure a strong bond between CC and the specimen, the latter was kept in the electrolyte for 5 minutes with subsequent anodic

Card 1/3

SOV/137-58-7-15452

Influence of the Parameters of Electrolytic Deposition (cont.)

pickling. Elimination of the phenomenon of "tracing" of lines by the ribs of the specimen was achieved by specially constructed devices. A description and drawing of the devices are given. For the removal of H_2 the specimen was held for 1 hr 30 min at 200° and 1 hr in oil at 150° . Measurement of M was performed by the PMT-3 apparatus during an interval of 60-120 days after chrome plating with a load of 100 g. W was determined by abrasion of the specimen with a polishing disk of a superhard alloy with a sliding speed of 1.6 m/sec wetted with a 0.5% water solution of K_2CrO_4 , and the size of resulting pitting on the surface (measurement was made under a microscope). The reciprocal of the volume of the pitting craters (mm^{-3}) multiplied by 1000 was taken as a criterion of W . W was determined in the interval between 210-370 days from the time of chrome plating. The test error amounted to 8-10%. M and W were determined for CC produced in either electrolyte in the range of cathode cd and temperature most generally used in practice. A high W is produced with M equal to 650-925 kg/mm^2 , with which the strength of the grains of Cr does not surpass the strength of their mutual bond. With high M values, when the strength of the grains of Cr exceeds the strength of their mutual bond, W decreases because of the crumbling of the grains. Chrome-plating procedures (cathode cd and temperature) in either electrolyte is proposed for production of CC with a high

Card 2/3

SOV/137-58-7-15452

Influence of the Parameters of Electrolytic Deposition (cont.)

($\geq 1000 \text{ kg/mm}^2$) M and W ($> 50 \text{ mm}^{-3}$). It is indicated that M may be used as a quick method for the determination of W of electrolytic CC. Bibliography: 20 references.

T.M.

1. Chromium plating--Mechanical properties 2. Surfaces--Preparation

Card 3/3

SHREYDER, A.V., referent.

Electrochemical method for determining the anticorrosive properties of
bituminous insulation of underground pipelines. Zav. lab. 23 no.3:339
'57. (MIRA 10:6)

(Electrolytic corrosion and anticorrosives)
(Bituminous materials)

AUTHOR: Shreyder, A.V., Reviewer

32-12-31/71

TITLE: A Method of Determining the Corrosion-Resisting Quality in the Diffusion of Hydrogen Through the Walls of a Hermetically Closed Hollow Sample, Which is Filled With the Corrosion Medium (Abstract) (Metodika otsenki korrozionnoy stoykosti po diffuzii vodoroda cherez stenki germetizirovannogo pologo obraztsa, zapolnyayemogo korrozionnoy sredoy) (Referat).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1471-1471 (USSR)

ABSTRACT: This is an abstract of the paper by Bloom et al., which was published in "Corrosion" (1957), 13, Nr 5, pp. 27-32. The method concerned had been adapted to the operational conditions of nuclear reactors and serves the purpose of determining the corrosion properties of metals under the action of hydrogen depolarization in cathode processes. For the experiment a piece of steel tube was filled with the corrosion liquid (a solution of lye and water). Its ends are bent in and welded. The sample obtained in this manner (capsule) was connected with a ferromagnet as a counterweight and by means of a pulley block it was conveyed into a system of quartz tubes and closed. That part of the system which contains the sample was heated

Card 1/2

A Method of Determining the Corrosion-Resisting Quality in the Diffusion of Hydrogen Through the Walls of a Hermetically Closed Hollow Sample, Which is Filled With the Corrosion Medium

32-12-31/71

up to 315°. As a result of the heating of the sample its walls became corroded. The hydrogen separated by depolarization and diffused through the walls of the sample increased the pressure in the closed system, which was recorded by the automatic pressure gauge provided. It was found that by the admixture of lye to the corrosion liquid hydrogen diffusion is diminished because a protective crust forms on the inside part of the walls of the sample (tube capsule). As soon as cracks occur in the crust as a result of thermal action (extension of the sample) pressure increases; it is reduced again as soon as a new crust is formed. There is 1 figure and 1 Slavic reference.

AVAILABLE: Library of Congress

Card 2/2 1. Hermetically sealed samples-Hydrogen resistance-Corrosion resistance-Determination

SHREYDER, A. V.

1-4E20

Changes of dimensions of articles of aluminum alloys during anodic oxidation. A. V. Shreyder. *Zhur. Prikl. Khim.* 30: 84-87 (1957). — The effect of the temp. and the duration of the anodic oxidation on the film thickness ϵ was detd. by gravimetric evaluation (cf. C. A. 40: 14517k) on cylindrical pieces (40 sq. cm.), anodized with Pt cathodes as follows: (a) in 20% H_2SO_4 with a c.d. of 1 amp./sq. dm.; (b) in 3% CrO_3 soln. at 40 v.; and (c) in 10% CrO_3 soln. at 40 v. In ϵ the max. voltage was reached in 15 min. and in ϵ in 5 min. The most important factor was the temp. (20-60°). At higher temps. ϵ decreased. The film dissolved when the duration of anodization increased. Anodizing in b affected ϵ less than in a. Because of the lower pH of c, ϵ is thinner than in b. The tendency to decrease ϵ increases from homogeneous alloys to polyphase alloys. Precision articles should be anodically oxidized in a 3% CrO_3 soln. at 34-42° for 45-65 min. at 40 v. The surface should be prepd. by treatment with org. solvents and not with alkali solns. I. Benicowitz

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Sheedy, A.V.

RB
 Corrosive cracking of brass in a cyanide electrolyte. *RB*
 Priblud. Khim. 30, 794-6 (1957).
 Stressed and nonstressed brass tubes filled with a Cd electrolyte contg. NaCN failed within 71-100 days when under stress whereas those nonstressed and tubes under stress but not filled with the soln. remained intact after 130 days. The crack was normal to the direction of stress, i.e., perpendicular to the axis of the tube. The zone of failure was coated with products of corrosion.
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Corrosive cracking of brass in a cyanide electrolyte. *RB*
 V. Sirekles, Zhur. L.A. 80, 16432.
 Stressed and nonstressed brass tubes filled with a Cd electrolyte contg. NaCN failed within 71-100 days when under stress whereas those nonstressed and tubes under stress but not filled with the soln. remained intact after 130 days. The crack was normal to the direction of stress, i.e., perpendicular to the axis of the tube. The zone of failure was coated with products of corrosion.
 L. Bencowitz

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Shreyder, A. V.

18 18
Corrosion of steel in the atmosphere of a metallurgical plant. A. V. Shreyder and A. I. Sokolov (Steel Inst. Moscow). *Zhur. Prikl. Khim.* 30: 1700-8 (1957). Corrosion was comparatively low near the open-heart furnaces. It was much higher near the pickling baths, and only a little less outside, near the plant. In June and July the relative corrosiveness in these 3 locations was 1:4:8. Expts. in a desiccator showed that HCl in air was more corrosive than SO₂ in air of the same concn. The loss in wt. of Armco steel after 160-hrs. exposure to air contg. 0.02 mg. SO₂/l. or 0.03 mg. HCl/l. was: in 10% humidity, 0.77, 0.80, and 357.90; in 75% humidity, 0.8, 12.48, and 540.13 g./sq. m. I. Bencowitz

FIGEL'MAN, M.A.; SHREYDER, A.V.

Hydrogen brittleness of steel in cathode processing. Zhur. prikl.
khim. 31 no.8:1184-1193 Ag '58. (MIRA 11:10)
(Steel--Brittleness)

SHREYDER, A.V.; ARAKELOV, A.G.

Mechanism of alkaline oxidation of steel. Zhur.prikl.khim. 31
no.11:1673-1678 N '58. (MIRA 12:2)
(Steel--Corrosion)

KOROVIN, Yuriy Mikhaylovich; ULANOVSKIY, Iosif Borisovich; SHOBİK,
L.Ye., inzh., ved. red.; SHREYDER, A.V., kand. tekhn. nauk,
red.; SOROKINA, T.M., tekhn. red.

[Corrosion of stainless steels in the spots in contact with
non-metallic materials]Korroziia nerzhavciushchikh stalei v
mestakh kontakta s nemetallicheskim telami. Moskva, Filial
Vses. in-ta nauchn. i tekhn. informatsii, 1958. 12 p. (Pere-
dovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 13.
No.M-58-139/16) (MIRA 16:2)
(Steel, Stainless-Corrosion)

LAYNER, Vladimir Il'ich, prof., doktor; ~~SHREYDER~~, A.V., kand.tekhn.nauk,
retsenzent, red.; STOKLITSKIY, L.I., inzh., retsenzent;
ARKHANGEL'SKAYA, M.S., red.izd-va; DOBUZHINSKAYA, L.V., tekhn.red.

[Electroplating of light alloys] Gal'vanicheskie pokrytiya legkikh
splavov. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i
tsvetnoi metallurgii, 1959. 137 p. (MIRA 12:5)
(Electroplating) (Alloys)

SHREYDER, A.V.

TOMASHOV, Nikon Danilovich. Prinimali uchastiye: TYUKINA, M.N.; PALEOLOG, Ye.N.; CHERNOVA, G.P.; MEKHAYLOVSKIY, Yu.N.; LUNEV, A.F.; TIMONOVA, M.A.; MODESTOVA, V.N.; MATVEYEVA, T.V.; BYALOBZHESKIY, A.V.; ZHUK, N.P.; SHREYDER, A.V.; TITOV, V.A.; VEDENEYEVA, M.A.; LOKOTILOV, A.A.; BERUKSHTIS, G.K.; DERYAGINA, O.G.; FEDOTOVA, A.Z.; FOKIN, M.N.; MIROLYUBOV, Ye.N.; ISAYEV, N.I.; AL'TOVSKIY, R.M.; SHCHIGOLEV, P.V.; YEGOROV, N.G., red.izd-va; KUZ'MIN, I.P., tekhn.red.

[Theory of the corrosion and the protection of metals] Teoriia korrozii i zashchity metallov. Moskva, Izd-vo Akad.nauk SSSR, 1959. 591 p. (MIRA 13:1)

(Corrosion and anticorrosives)

25(1)

PHASE I BOOK EXPLOITATION

SOV/3161

Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti,
Kiyevskoye oblastnoye pravleniye

Zashchitno-dekorativnyye i spetsial'nyye pokrytiya metallov (Protective,
Decorative, and Special Coatings for Metals) Kiyev, Mashgiz, 1959. 291 p.
4,200 copies printed.

Editorial Board: P. K. Lavorko, N. I. Litvak, and A. P. Eychis (Resp. Ed.);
Ed. of Publishing House: M. S. Soroka; Chief Ed. (Southern Division,
Mashgiz): V. K. Serdyuk, Engineer.

PURPOSE: This book is intended for technical personnel in the field of protective
coatings for metals.

COVERAGE: The papers in this collection, presented at a conference of the NTO
Mashprom held in Odessa, deal with the mechanization and acceleration of
metal-coating and plating processes performed by spraying, electrolytic,
and other methods. Quality control of protective coatings is also discussed.
No personalities are mentioned. References follow several of the papers.

Card 1/7

28(5)

AUTHORS:

Gintsberg, S. A., Shreyder, A. V.

SOV/32-25-6-33/53

TITLE:

On the Constant Moisture in Corrosion Chambers Operating With a Temperature Cycle (O postoyannoy vlazhnosti v korrozionnykh kamerakh, rabotayushchikh s temperaturnym tsiklom)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 6, p 741 (USSR)

ABSTRACT:

Accelerated corrosion tests which are intended to imitate the conditions of a tropical atmosphere require a steam pressure changing with temperature as little as possible. Saturated salt- and sulfuric acid solutions are not suited for this purpose as the steam pressure varies considerably with temperature. The use of glycerin - water mixtures is recommended, as in this case only slight variations of steam pressure with temperature are to be observed, which secures a considerable improvement with respect to the reproducibility of the test results. The solutions are not aggressive and the relative moisture changes in proportion to the glycerin concentration of the solution (figure, dependence of the relative moisture of the air over glycerin solutions on the molar concentrations

Card 1/2

On the Constant Moisture in Corrosion Chambers Operating SOV/32-25-6-33/53
With a Temperature Cycle

of glycerin at $20 \pm 1^{\circ}$). There are 1 figure and 3 references,
2 of which are Soviet.

ASSOCIATION: Vserossiyskiy nauchno-issledovatel'skiy khimicheskiy institut
promyshlennosti mestnogo podchineniya (All-Russian Scientific
Chemical Research Institute of the Industry of Local
Subordination)

Card 2/2

PHASE I BOOK EXPLOITATION

SOV/4623

Shreyder, Aleksandr Viktorovich, Docent, Candidate of Technical Sciences

Oksidirovaniye alyuminiya i yego splavov (Oxidation of Aluminum and Its Alloys) Moscow, Metallurgizdat, 1960. 220 p. Errata slip inserted. 3,650 copies printed.

Reviewers: V.I. Layner, Professor, Doctor of Technical Sciences, and Ye.M. Zaretskiy, Candidate of Technical Sciences; Ed. of Publishing House: M.S. Arkhangel'skaya; Tech. Ed.: P.G. Islent'yeva.

PURPOSE: This book is intended for engineers and scientists interested in metal physics and the protection of metals against corrosion. It may also be used by teachers and students in schools of higher education.

COVERAGE: The book contains data from current Soviet and non-Soviet literature on the technology of imparting oxide coatings to aluminum alloys, and offers theoretical explanations for the mechanisms of oxidation processes as related to the chemical composition and properties of alloys. The properties of oxide films and ways of improving the corrosion resistance and physicomechanical

Card 1/6

Oxidation of Aluminum and Its Alloys

SOV/4623

properties of metals by oxidation are also discussed. The author thanks S.A. Gintsberg, Candidate of Technical Sciences, and Engineer A.F. Ivanov for technical advice on anodizing; and N.I. Kubasova, N.A. Poletkina, Ye. V. Artamonova, and A.N. Kulikova for assisting in laboratory and plant experiments. There are 309 references: 160 Soviet, 70 English, 60 German and 19 French.

TABLE OF CONTENTS:

Introduction	5
Ch. I. Some Peculiarities of Aluminum and Its Alloys	7
Ch. II. Preparation of the Surface of Aluminum and Its Alloys Before Oxidation	14
A. Preliminary treatment	16
Cleaning, surface conditioning, grinding, shot blasting, pickling, and alkaline cleaning,	
B. Fundamental treatment	19
Sandblasting, scratch brushing, decorative pickling, abrasive polishing in drums, polishing	

Card 2/6

S/184/60/000/004/007/021
A109/A029

AUTHORS: Tomashov, N.D., Professor, Doctor of Chemistry; Shreyder, A.V.,
Docent, Candidate of Technical Sciences; Titov, V.A., Candidate of
Technical Sciences

TITLE: Investigation of Corrosion Resistance of Metals in Solutions of Sul-
furic and Phosphoric Acids at High Temperatures

PERIODICAL: Khimicheskoye Mashinostroyeniye, 1960, No. 4, pp. 20 - 24

TEXT: This article was worked out in cooperation with I.M. Balandin, V.M. Dobrov, L.Ya. Suvorov, Doctor of Chemistry A.I. Krasil'shchikov, and Candidates of Technical Sciences A.A. Babakov, A.Ye. Gopius and V.I. Konstantinov and gives results of tests on machine building materials. The resistance in diluted sulfuric and phosphoric acids, the technological and physical properties of the following metals and alloys were investigated: OX18H9T (OKh18N9T), 1X18H9T (Kh18N9T), X28 (Kh28), X34 (Kh34), ЭИ380 (EI380), ЭИ530 (EI530), ЭИ432 (EI432), ЭИ533 (EI533), ЭИ623 (EI623), ЭИ629 (EI629), ЭИ349 (EI349), Бр. АН 7-8 (Br. AN 7-8), Бр. АМ4 9-2 (Br. AMts. 9-2), Бр. АЖ 9-4 (Br. AZh 9-4) alloys, platinum plate, zirconium, tantalum, niobium and other materials. Tests were carried out in sealed

Card 1/3

S/184/60/000/004/007/021
A109/A029

Investigation of Corrosion Resistance of Metals in Solutions of Sulfuric and Phosphoric Acids at High Temperatures

pyrex glass and ampoules placed in an autoclave of 1Kh18N9T steel. Temperatures varied from 250 - 300°C and the heating time from 24 - 1,501 h. Complications arose during tests of materials with low corrosion resistance as nascent hydrogen caused inner pressure, occasionally resulting in bursting of the ampoule. A detailed description of the test methods and conditions is given. The corrosion depth in mm/year after a 72-h test demonstrates clearly the effect of temperature on the corrosion of alloys. The 72-h corrosion depth logarithm depends on the reciprocal value of the absolute temperature. At corrosion in 10%-H₃PO₄ the phosphate layers observed on the surface of EI461 and EI629 alloys had a decisive protective character. Corrosion tests in sulfuric and phosphoric acids established a high resistance of platinum and an adequate resistance of tantalum. Niobium and its binary alloys with tantalum retain their resistance only in sulfuric acid. A low-resistance protective layer is formed on the surface of acid-proof austenitic nickel-chromium-molybdenum steel and nickel-based EI461 alloy in phosphoric acid at high temperatures. Protective coatings are formed on the surface of niobium and niobium-tantalum alloys in sulfuric and phosphoric acids. Their presence on niobium-tantalum alloys in phosphoric acid prevents the solu-

Card 2/3

S/081/62/000/002/054/107
B145/B101

AUTHORS: Gintsberg, S. A., Shreyder, A. V.

TITLE: Methods of protecting products with ferrous and non-ferrous metal joints from atmospheric corrosion with the aid of inhibitors

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 2, 1962, 232, abstract 2I216 (Tr. Vseros. n.-i khim. in-ta mestn. prom-sti, no. 9, 1960, 10 - 38)

TEXT: Various inhibitors of atmospheric corrosion in the conservation of products with steel, brass, Zn and Ni joints are described. The following corrosion inhibitors were used: salts of mineral and organic acids with organic and mineral cations, organic and mineral acid esters, amines, N₂ - heterocycles and thiocompounds. The synthesis of compounds described and not described in publications is given: cyclohexyl ammonium chromate, dicyclohexyl ammonium chromate, triethanolamine tetraborate, triethanolamine molybdate. Ammonium benzoate, cyclohexyl ammonium chromate, dicyclo-
Card 1/2

31561
S/081/61/000/022/042/076
B102/B101

18.8300

AUTHORS:

Shreyder, A. V., Figel'man, M. A.

TITLE:

Investigation of the hydrogen embrittlement of steel in electroplating

PERIODICAL:

Referativnyy zhurnal. Khimiya, no. 22, 1961, 293 - 294, abstract 22K145 (Tr. Vseros. n-i. khim. in-ta prom-sti mestn. podchineniya, no. 10, 1960, 33 - 85)

TEXT: The influence of cathodic polarization conditions in acid and alkaline solutions on the hydrogen embrittlement (HE) of carbon steel is pointed out. The kinetics of hydrogen adsorption and the HE of steel were studied. The stimulating action of cyanides and sulfides on hydrogen adsorption in cathodic polarization of steel in alkaline solutions was verified. Reduction of hydrogenation in cathodic treatment of tempered metal in acid media is achieved by adding CrO_3 to the electrolyte.

Additions to alkaline electrolytes do not reduce HE considerably. The strongest tendency to HE displays cold-deformed steel without subsequent annealing. This proves the predominant influence of the metal stress on

Card 1/4

31561
S/081/61/000/022/042/076
B102/B101

Investigation of the hydrogen...

X
the amount of HE. The increase in brittleness in electroplating is due to the presence of internal stresses in the deposits and to the hydrogen adsorption of the steel backing. The deposition of thin layers is accompanied by an increase in brittleness exceeding that of thick ones. The increase in brittleness is reduced with increasing thickness of the deposit. An intensification of the electrodeposition process may, on one hand, intensify the increase in brittleness due to decrease in current yield when the plating process is accelerated, and on the other - reduce the growth in brittleness due to a more rapid formation of deposit, serving as a barrier for the hydrogen penetration into the metal. Plating in cyanide electrolytes (zinc, cadmium, copper plating) is accompanied by considerably higher hydrogen adsorption than in acid ones. In acid baths the current yield is increased and cyanides intensifying hydrogen adsorption are absent. Nickel-plating leads to an increase in brittleness of tempered metal stronger than that of quenched metal. This is due to the predominant influence of stresses in the deposit. Any changes in chromium plating method, thickness of Cr deposit, dechroming conditions (anodic etching of chromium), interruptions of the current in chrome-plating have different effects on the brittleness of quenched and tempered steels. In

Card 2/4

31561
S/081/61/000/022/042/076
B102/B101

Investigation of the hydrogen...

chrome-plating of tempered steels this is explained by a connection between increase in brittleness and the presence of internal stresses in the deposit - and for quenched steels it is assumed to be mainly due to hydrogenation of the backing. Electroplating results in a decrease of the fatigue limit, especially for quenched steel coated with nickel, then with chromium, zinc, and copper. The main effect on the recovery of plastic properties of steel after cathodic degreasing displays the temperature of the liquid medium in which dehydrogenation takes place; the effect of anodic aging is negligible. Electrolytic degreasing and dipping change the brittleness of steel in different directions which arises in subsequent metalplating in dependence on various factors, among which the structure of the basic metal is the most important one. Also shape and thickness of metal coatings and the conditions of electro-deposition have an influence: thin Cu and Ni backings reduce the brittleness arising in subsequent chrome-plating; thick Cu backings may intensify brittleness. Addition of oxidizers (CrO_3 , KMnO_4) to acid solutions is little effective with respect to a decrease in brittleness in electrolytic cathodic treatment of quenched metal, but reduces the increase in brittleness in etching (dip) without current. Increase of

Card 3/4

X

Investigation of the hydrogen...

31561
S/081/61/000/022/042/076
B102/B101

current yield, current reversal, and stirring do not reduce the brittleness of quenched steel, but reduce that of tempered steel. Aging restores the plastic properties only of parts which were subjected to cathodic treatment without galvanic deposition; after polarization in alkali, plasticity is restored more rapidly and more completely in aging than after polarization in acids. Aging of steel parts with deposits may also lead to an increase in brittleness. [Abstracter's note: Complete translation.]

X

Card 4/4

S/080/60/033/007/014/020
A003/A001

AUTHORS: Gintsberg, S. A., Shreyder, A. V.

TITLE: Amine Chromates and Esters of the Chromic Acid as Inhibitors of Atmospheric Corrosion

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 7, pp. 1594-1599

TEXT: Dicyclohexylammonium nitrite, cyclohexylammonium carbonate, monoethanolamine carbonate and benzoate are inhibitors of atmospheric corrosion used on a broad scale. A drawback of these inhibitors is their aggressiveness in relation to non-ferrous metals, especially zinc and copper alloys. Easily available esters of the chromic acid and also amine chromates were investigated as corrosion inhibitors. The effect of the chromates was investigated in a corrosion chamber with cyclic temperature drop at a relative humidity of 96-98% and a SO₂ concentration of 0.01 mg/l. The temperature cycle consisted in a 15-min heating to 40°C, holding the sample for 45 min at this temperature, cooling and holding for 2 hours at room temperature. The samples tested were made of γ 12 (U12) steel (1.2% C), λ -70 (L-70) brass (70% Cu, 30% Zn) without coatings and steel samples with poreless zinc and nickel coatings. Samples of

Card 1/3

S/080/60/033/007/014/020

A003/A001

Amine Chromates and Esters of the Chromic Acid as Inhibitors of Atmospheric Corrosion

oxidized MA-2 magnesium alloy and non-oxidized D-16 (D-16) Duraluminum were also tested. The inhibitors were introduced into wrapping paper in the amount of 18-20 g/m². Cyclohexylammonium chromate was applied from an aqueous suspension, dicyclohexylammonium chromate and the esters of the chromic acid from alcohol solutions. It was shown that the best protection for steel is obtained with cyclo- and dicyclohexylammonium chromates. Their effect is noticeably higher than that of dicyclohexylammonium nitrite and cyclohexylammonium carbonate. The inhibitors mentioned, especially cyclohexylammonium chromate, have also good protective properties with regard to non-ferrous metals. Experiments with samples made from D-16 Duraluminum and oxidized magnesium alloy showed good protective properties of cyclo- and dicyclohexylammonium chromates with regard to magnesium alloys. The potential of steel, brass, nickel and zinc samples in tap water containing chromates of cyclo- and dicyclohexylammonium was shifted to the side of positive values. The "blit effect", i.e., the intensification of corrosion in narrow gaps is considerable for dicyclohexylammonium chromate.

Card 2/3

S/080/60/033/007/014/020
A003/A001

Amine Chromates and Esters of the Chromic Acid as Inhibitors of Atmospheric Corrosion

It can be suppressed by adding phenyl and butyl benzoates to the inhibitor. There are 3 graphs and 7 references: 2 Soviet, 2 English, 2 German and 1 Czechoslovakian.

SUBMITTED: June 1, 1959

Card 3/3

25072

S/080/60/033/010/026/029

D216/D306

188310

AUTHORS: Gintsberg, S.A., and Shreyder, A.V.

TITLE: The use of certain amino salts of inorganic acids as inhibitors of the atmospheric corrosion of metals

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 10, 1960, 2366 - 2368

TEXT: Owing to the great diversity of their composition and service conditions, many metallic articles are not given any adequate protection by common inhibitors. Therefore, an investigation of the protective action of packing paper impregnated with aminosalts and certain inorganic acids was carried out. The amine cations were selected to include a nitrogen-containing group, so as to facilitate irreversible sorption onto the surface of the protective metal. The anions of the salts had to provide either a passivating or a film-forming action of the inhibitor. Molybdates and wolframa-
tes were used as representatives of the former, and phosphates and

Card 1/3

25072

S/080/60/033/010/026/029

D216/D306

The use of certain amino ...

borates of the latter. Corrosion tests were carried out in a cabinet, using periodic heating and cooling. The temperature was maintained at 40° for 1 hour, reduced to 20° for 2 hours, and was then raised again, etc. The relative humidity was maintained at 92-94 % at all temperatures by means of glycerine solutions. 0.01 mg/l SO₂ gas was introduced into the cabinet daily. The effective-

ness of the protective action was estimated for steel according to the proportion of the surface having suffered corrosion, and for non-ferrous metals, by a specially designed 10-point scale. In this scale, Class 1 corresponds to the presence on the metal surface of slight tarnishes which wash off easily, or of deposition of inhibitors, Class 2 - appearance of tarnishes which cannot be washed off, Class 3 - single corrosion pits, Class 4 - pitting corrosion, Class 5 - pits with corrosion products, Class 6 - separate stains on the external surface, Class 7 - stains on both surfaces, Classes 8 - 10 - intense corrosion with formation of considerable quantities of corrosion products, the paper sticking to such a surface. Packing paper was saturated with aqueous solutions of inhibitor in

Card 2/3

25072

S/080/60/033/010/026/029

D216/D306

The use of certain amino ...

such a way as to ensure the presence of $15-20 \text{ g/m}^2$ of inhibitor in the packing paper. Salt losses after long exposure under conditions of small temperature variations ($20 \pm 2^\circ$) and humidity ($50 \pm 5\%$) were studied parallel with the corrosion tests. These losses were due to volatilization. The changes in relative volatilization with time are shown. The authors conclude that among the tested salts only mono- and tri-ethynolamine borates can be regarded as possible inhibitors of atmospheric corrosion for steel articles containing, apart from uncoated components, nickel and zinc plated components or components made of zinc and nickel-base alloys. There are 2 figures and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Hackerman and A.C. Macrides, Ind. Eng. Ch., 46, 3, 523-527, 1954.

SUBMITTED: November 12, 1959

Card 3/3

85447

S/080/60/033/011/006/014
A003/A001

188300 exclude 2408

AUTHORS: Shreyder, A. V., Gintsberg, S. A.

TITLE: On the Slit Effect in the Inhibition of Atmospheric Corrosion¹⁸

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 11, pp. 2541-2547

TEXT: The slit effect of corrosion was determined on samples (0.1 mm thick) of γ 12 (U12) steel of 22 x 15 mm. Two of these samples were packed together and the difference of corrosion on their outside and inside surfaces was investigated. The samples were kept in corrosion chambers with continuously changing temperature (20°C for 2 hours and 40°C for 1 hour), a humidity of 94-96% and a content of 0.1 mg/l of sulfur dioxide in the air. The index of the slit effect was determined by the formula $A = \frac{I}{I + O} \cdot 100\%$, where I is the area affected by corrosion on the

inner surfaces of the samples, O is the outer surface affected by corrosion. [Abstractor's note: I (inner) is a translation of the Russian V (vnutrennyy) and O (outer) a translation of N (naruzhnyy)]. It was shown that the slit effect increases with the capillary condensation in the gap. If thin samples (0.1 mm) are packed with thick samples (0.4 mm) the slit effect decreases from 81.7 - 96.4%

Card 1/3

85447

S/080/60/033/011/006/014
A003/A001

On the Slit Effect in the Inhibition of Atmospheric Corrosion

to 41.2 - 76.1% when using ammonium benzoate as inhibitor. Among the 32 inhibitors tested, the slit effect is manifested when compounds are used like ammonium benzoate, dicyclohexylammonium chromate. Stimulators of corrosion (diphenylguanidine) and indifferent compounds (diphenylguanidine benzoate) can also give rise to slit effect. The use of the following substances, which are non-volatile and stimulators of corrosion, is not accompanied by the slit effect: monoethanolamine tungstate, triethanolamine tungstate, the ammonium salts of synthetic fatty acids, the sodium salt of alkylsulfoacid, the sodium salt of aliphatic aminoacid. Many inhibitors stop corrosion only in the presence of oxygen. The reduced aeration in the slit decreases the effect of passivators. A special inhibitor was tested which contained an "antislit" admixture. For this purpose 7.5 to 50.0% (based on the inhibitor weight) casein and albumin glues, phenylbenzoate, phenylolate, butylbenzoate and the sodium salt of a mixture of mono- and diesters of orthophosphoric acid was added to chromates of cyclohexylammonium and dicyclohexylammonium, ammonium benzoate and diphenyl guanidine and to a mixture of urotropine with sodium nitrite. The slit effect was abolished and the protective properties were increased somewhat by adding (in the ratio 1 : 2) butyl-

Card 2/3

85447

S/080/60/033/011/006/014
A003/A001

On the Slit Effect in the Inhibition of Atmospheric Corrosion

and phenylbenzoate to chromates of cyclo- and dicyclohexylammonium and to ammonium benzoate. There are 2 figures, 3 tables and 13 references: 11 Soviet, 2 English.

SUBMITTED: March 7, 1960

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Card 3/3

SHREYDER, A.V.

Letter to the editor. Izv. vys. ucheb. zav.; khim. i khim. tekhn.
4 no. 2:333 '61. (MIRA 14:5)
(Aluminum alloys) (Oxidation)

AKOL'ZIN, P.A., doktor tekhnicheskikh nauk; SHREYDER, A.V., dotsent, kand.
tekhn.nauk

"Theory of the corrosion and protection of metals" by N.D. Tomashov.
Reviewed by P.A. Akol'zin. Zav. lab. 27 no. 4:503 '61. (MIRA 14:4)

(Corrosion and anticorrosives) (Tomashov, N.D.)

S/080/61/034/008/011/018
D204/D305

AUTHOR: Shreyder, A.V.

TITLE: On evaluating the effectiveness of anodic oxidation of aluminum alloys by the coefficient of coverage

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 8, 1961, 1779-1786

TEXT: The peculiarities of anodic oxidation of metals make it impossible for characteristics such as current efficiency, energy efficiency, etc. to be used for evaluating the effectiveness of this process. In order to overcome this difficulty, a new concept, the "coverage coefficient" (C_c) was coined by R.B. Mason and C. Slunder (Ref. 2: Ind. Eng. Ch., 39, 1, 2, 1947) and R.B. Mason and P.E. Fowle (Ref. 3: J. Electrochem. Soc., 101, 2, 53-59, 1954). In order to assess the value of C_c , the sensitivity with which this factor reacts to any change in the parameters of the anodizing process was determined, and efforts made to find the extent to which changes

Card 1/3

S/080/61/034/008/011/018
D204/D305

On evaluating the effectiveness...

in C_c can be explained logically on the basis of the known mechanism of the process of anodic oxidation of aluminum and its alloys. The alloys AMg (2.4% Mg, 0.3% Mn), D-1, (4.3% Cu, 0.8% Mg, 0.8% Mn) and AK-6 (2.2% Cu, 0.6% Mg, 0.6% Mn, 1.0% Si) were used in this investigation. Anodizing was carried out in 3 electrolytes: 20% H_2SO_4 , 3% CrO_3 and 10% CrO_3 , with various times and working temperatures. The oxide film was removed in a solution containing 20 g/l CrO_3 + 35 ml/l H_3PO_4 (specific gravity 1.6) at 90°, during a 10-minute immersion. The attack of AMg by the stripping solution was negligible, and as regards the alloys D-1 and AK-6 it was allowed for in a correction. The following relationships were studied for all 3 alloys in the above electrolyte: C_c against time of anodizing, temperature and weight of metal oxidized during anodizing. The influence of the working voltage used in anodizing in a 3% CrO_3 solution of the change of C_c during film formation on the AK-6 alloy was studied, and the relationships between C_c , weight of film formed, and weight of oxidized metal against time of anodizing for the D-1 alloy in the same solution were also investigated. It was found

Card 2/3

S/080/61/034/008/011/018
D204/D305

On evaluating the effectiveness...

that the value of C_c provides a clear indication of the effectiveness of the anodizing process only in a limited range of anodizing conditions (e.g. in a 20% H_2SO_4 electrolyte at temperatures from R.T. upwards). A change in the value of C_c need not correspond to any change in the quality of the films or the practical effectiveness of the film formation process, the latter being dependent on the parameters of the process as well as the nature of the aluminum alloy being anodically oxidized. There are 5 figures, 1 table and 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows:
R.P. Mason, G. Slunder, Ind. Eng. Ch., 39, 1, 2 (1947); R.P. Mason, P.E. Fowle, J. Electrochem. Soc., 101, 2, 53-59 (1954); J.M. Kape, Metal Ind. 91, 4012 (1957).

SUBMITTED: August 29, 1960

Card 3/3

S/080/62/035/002/021/022
D204/D302

18.115)
AUTHORS:

Shreyder, A. V. and Degtyareva, G. L.

TITLE:

Relationship between heat resistance and velocity constants of the oxidation reactions of chrome and chrome-nickel steels

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 2, 1962, 455-458

TEXT: Oxidation of 15 steels (compositions tabulated) was studied at 900 + 5°C, over 100, 200, 300, 400, 500, 700 and 1000 hours in air. Extent of reaction was assessed by the weight-gain method. The oxidized layers were stripped off electrolytically, in a melt of 60% NaOH/40% Na₂CO₃, at 350 - 400°C, using current densities of 40 - 50 A/dm², over 5 - 15 minutes. The results are shown graphically. It was found that steels 1X18H9T, X23H13, X25T, X18H11C2A, X18H11C2Г3A and X18H11C2Г2A (1Kh18N9T, Kh23N13, Kh25T, Kh18N11S2A, Kh18N11S2G3A and Kh18N11S2G2A) oxidized parabolically whilst steels X23H11, X25H20C2, X25H05, X20H14C2, X25H16Г7AP, X25H16Г7C2AP,

Card 1/2

GAVRILYUK, Anatoliy Mefod'yevich; SHOBİK, L.Ye., inzh., ved. red.;
SHREYDER, A.V., kand. tekhn.nauk, red.; PONOMAREV, V.A.,
tekhn. red.

[Anticorrosion coatings and materials for tropical climate
conditions] Antikorroziionnye pokrytiia i materialy dlia us-
loviĭ tropicheskogo klimata. Moskva, Filial Vses. in-ta
nauchn. i tekhn. informatsii, 1958. 7 p. (Peredovoi na-
ucho-tekhnicheskii i proizvodstvennyi opyt. Tema 13.
No.M-58-178/20) (MIRA 16:3)

(Corrosion-resistant materials--Climatic factors)

(Protective coating--Climatic factors)

TITOV, Vasilii Alekseyevich, kand.tekhn. nauk; YAKUBENKO, Arnol'd Romanovich, inzh.; SHOBİK, L.Ye., inzh., ved. red.; SHREYDER, A.V., kand. tekhn. nauk, red.; SOROKINA, T.M., tekhn. red.

[Effectiveness of steel protection against corrosion by various methods of oxidation]Effektivnost' zashchity stali ot korrozii razlichnymi metodami oksidirovaniia. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 14 p. (Peredovdi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 13. No.M-58-108/11)
(Steel--Corrosion) (Metallic films) (MIRA 16:3)

GOL'DSHTEYN, Mark Yefimovich; SHOBİK, L.Ye., inzh., ved. red.;
SHREYDER, A.V., kand., tekhn. nauk, red.; SMIRNOV, B.M.,
tekhn. red.

[Electrodeposition of nickel-phosphorus alloys] Elektrolitiches-
koe osazhdenie splava nikel - fosfor. Moskva, Filial Vses.
in-ta nauchn. i tekhn. informatsii, 1958. 15 p. (Peredovoi
nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 13.
No.M-58-132/14) (MIRA 16:3)
(Nickel-phosphorus alloys) (Electroplating)

BOGORAD, Lev Yakovlevich; GUTKIN, Ben'yamin Girshevich; SHOBİK, L.Ye.,
inzh., ved. red.; ~~SHREYDER, A.V.~~, kand. tekhn.nauk, red.;
PAUTIN, N.V., inzh., red.; SOROKINA, T.M., tekhn. red.

[Wear resistant chromizing with periodic current reversal] Iz-
nosostoikoe khromirovanie pri periodicheskom izmenenii naprav-
leniya toka. Moskva, Filial Vses. in-ta nauchn. i tekhn. in-
formatsii, 1958. 23 p. (Peredovoi nauchno-tekhnicheskii i
proizvodstvennyi opyt. Tema 13. No.M-58-245/25) (MIRA 16:3)
(Chromium plating)

AROBELIDZE, Aleksandr Konstantinovich; SHOBİK, L.Ye., inzh., ved.
red.; SHREYDER, A.V., kand. tekhn. nauk, red.; SOROKINA,
T.M., tekhn. red.

[Improved technology of porous chromium plating] Uovershen-
stvovanie tekhnologii poristogo khromirovaniia. Moskva, Filial
Vses.in-ta nauchn. i tekhn. informatsii, 1958. 19 p. (Peredovoi
nauchno-tekhnicheskii i i proizvodstvennyi opyt. Tema 13.
No.M-58-244/24) (MIRA 16:2)

(Chromium plating)

SHOBIK, L.Ye., inzh., ved. red.; KGNAREV, M.I., kand. khim. nauk,
red.; SHREYDER, A.V., kand. tekhn. nauk, red.; PONOMAREV,
V.A., tekhn. red.; SOROKINA, T.M., tekhn. red.

[Protection of metals from corrosion; wear-resistant, finish-
ing, and decorative coatings] Zashchita metallov ot korrozii,
iznosostoihie, otdelochnye i dekorativnye pokrytiia. Moskva,
Filial Vses. in-ta nauchn. i tekhn. informatsii. Nos. 1-8. 1958.
(Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt.
Tema 13. Nos. M-58-19/2, M-58-60/5, M-58-95/8, M-58-96/9,
M-58-100/10, M-58-169/19, M-58-257/26, M-582/27)

(MIRA 16:3)

(Corrosion and anticorrosives) (Electroplating)

KARRA, Valentin Yakovlevich; MININ, Aleksandr Savel'yevich; SHOBIK, L.Ye., inzh., ved. red.; SHREYDER, A.V., kand.tekhn.nauk, red.; PONOMAREV, V.A., tekhn. red.

[Performance of chromium plating steel baths with passivation linings and cathodic protection. Molybdenum coating of aluminum and its alloys] Rabota stal'nykh khromovykh vann s primeneniem passivirovaniia i katodnoi zashchity. Molibdenirovanie aliuminiia i ego splavov. Moskva, Filial Vses. inst. nauchn.i tekhn.informatsii, 1958. 10 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 13. No.M-58-265/28) (MIRA 16:3)

(Chromium plating--Equipment and supplies)
(Protective coatings) (Aluminum)

SHREYDER, Aleksandr Viktorovich, kand. tekhn.nauk; DEGTYAREVA, Galina
L'vovna; SHLUGER, M.A., red.; NAUMOV, I.D., nauchnyy red.;
VASIL'YEVA, F.A., ved. red.; LADONINA, L.V., tekhn. red.

[Corrosion resistance of aluminum and the use of aluminum in
various branches of industry; review of practices in foreign
countries] Korroziionnaia stoikost' aliuminiia i ego primene-
nie v razlichnykh otrosliakh promyshlennosti; obzor zarubezh-
noi tekhniki. Moskva, Gos.nauchno-issl. in-t nauchn. i tekhn.
informatsii, 1962. 62 p. (MIRA 16:4)

(Aluminum--Corrosion)

SHREYDER, A.V.

Letter to the editors. Metalloved i term. obr. met. no.12:55
D'63. (MIRA 17:2)

D'YAKOV, V.G.; LEVIN, I.A.; SHREYDER, A.V.

Aluminum, titanium, and OKH21N5T and KH21N6M2T low-nickel steels as materials for the equipment of petroleum refineries and petrochemical plants. Mash. i nef. obor. no.4:27-33 '63. (MIRA 17:8)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut neftyanogo mashinostroyeniya.

ACCESSION NR: AT4043068

S/0000/64/000/000/0035/0047

AUTHOR: Shreyder, A. V.

TITLE: The activation energy and mechanism of anodic oxidation of Al alloys

SOURCE: Mezhevuzovskaya konferentsiya po anodnoy zashchite metallov ot korrozii. 1st, Kazan, 1961. Anodnaya zashchita metallov (Anodic protection of metals); doklady* konferentsii. Moscow, Izd-vo Mashinostroyeniye, 1964, 35-47

TOPIC TAGS: aluminum alloy, anodized aluminum alloy, anodic oxidation, activation energy, Arrhenius graph method, alloy A1, alloy D1, alloy AK6, sulfate electrolyte anodizing, chromate electrolyte anodizing, anodic film formation, aluminum oxidation

ABSTRACT: The author sought to clarify the mechanism of formation of an anodic oxide film by analyzing the activation energies of film formation and aluminum oxidation. He introduces the concept of elementary stages (I - VI) of anodic oxidizing of Al and its alloys, describing these and parallel reactions occurring at each stage in tabular form. Activation energies were calculated from Arrhenius graphs for samples of alloys AMg, D1 and AK6 (compositions given, latter two hardened and artificially aged, former unhardened), anodized in three electrolytes (20% H₂SO₄, 10% CrO₃, or 3% CrO₃; 15-120 min., 25-55C).

Card

1/2

ACCESSION NR: AT4043068

Weight differences between the oxidized sample and a sample with the oxide film removed (10 min., 90C, 20 g/l CrO_3 and 35 ml/l H_3PO_4 -- sp. gr. 1.6) served as the quantitative criterion of film formation, while loss of aluminum was the criterion of the aluminum oxidation process. The employed method produced apparent energy values (tabulated) which differed significantly from true activation energies by values for heats of adsorption hydration, etc. It was not possible to determine with this method whether direct oxidation of Al by oxygen or the cross diffusion of Al^{3+} and O^{2-} ions in the oxide film is the controlling stage of the process. "The author expresses his gratitude to V. V. Skorcheletti for his evaluation of this study". Orig. art. has: 3 tables and 27 graphs.

ASSOCIATION: None

SUBMITTED: 13Mar64

ENCL: 00

SUB CODE: MM

NO REF SOV: 006

OTHER: 001

Card

2/2

L 6706-65 EWT(m)/EWP(q)/EWP(b) AFT(p)/ASD(m)-3 JD

8/0282/64/000/005/0002/0002

ACCESSION NR: AR4041667

SOURCE: Ref. zh. Khimicheskoye i kholodil'noye mashinostroyeniye. Otd. vy'p. Abs. 5.47.10

AUTHOR: Shreyder, A. V.; Shparber, I. S.; Varfolomeyev, V. V.

TITLE: Stratification of metal of vessel walls

CITED SOURCE: Bezopasnost' truda prom-sti, no. 1, 1964, 17-19

TOPIC TAGS: metal stratification, vessel wall, hydrogen penetration, hydrogen damage, metal surface impregnation

TRANSLATION: In the last 2 - 3 years in a number of enterprises of oil refining industry in vessel walls of separate technological apparatuses working with media containing hydrogen sulfide (to 1.5%) and moisture at temperatures from 30 to 50°C and pressures from 7 to 32 kgs/cm² there were repeatedly revealed cases of metal stratification, the formation of walls of bubbles and a large quantity of cracks. Cause of this phenomenon is thought to be penetration of hydrogen in steel. We considered the process of hydrogen damage of metal and conditions promoting the

Card 1/2

L 6706-65

ACCESSION NR: AR4041667

penetration of hydrogen in metal. We recommend measures undertaken to combat hydrogen destruction of metal of vessels divided into 2 basic groups: 1) measures for and on preventing of corrosion process which causes separation of hydrogen (deposition on vessel walls, from inside of varnish and paint coverings) and 2) measures directed towards decreasing the degree of penetration of hydrogen in metal (introducing into the aggressive media polysulfides to decelerate the adsorption of hydrogen, or oxygen which causes transition of the sulfides present in aggressive media into polysulfides) Bibliography: 3 references

SUB CODE: MM

ENCL: 00

Card 2/2

D'YAKOV, V.G., kand. tekhn. nauk; SHREYDER, A.V., kand. tekhn. nauk;
CHEREPAKHOVA, G.L., inzh.

Using aluminum alloys for petroleum heat-exchanging equipment.
Khim. i neft. mashinostr. no.3:31-33 S '64. (MIRA 17:12)

L. 24681-65 EWT(m)/EWA(d)/EPR/EWP(t)/EWP(b) Ps-4 IJP(s) JD/WB
 ACCESSION NR: AR5000966 S/0282/64/000/010/0002/0002

SOURCE: Ref. zh. Khimicheskoy i kholodil'noye mashinostroyeniye. Otd. vyp. 10.47.18

AUTHOR: Shreyder, A. V.; Degtyareva, G. L.; Sukhacheva, S. V.

TITLE: Oxidation of magnalium by water at high pressures and temperatures

CITED SOURCE: Tr. Gos. n.-i. i proyekt. in-t neft. mashinostr., vyp. 2, 1964, 67-72

TOPIC TAGS: magnalium piping, anticorrosion oxidation, condensation piping, water supply piping, distilled water oxidation, protective film index, piping oxidation technique, pipeline corrosion, aluminum alloy corrosion

TRANSLATION: Piping for water supply and condensation cooling equipment used in many manufacturing processes of the oil refining, petrochemical and other branches of industry is made of magnalium in view of the alloy's high corrosion stability and technological qualities. Magnalium piping is nonetheless subject to some corrosion after a given period of exposure and the attack is intensified when the recirculating cooling water contains impurities. The protection of the

Card 1/2

L 24680-65

ACCESSION NR: AR5000966

internal surfaces of such piping by electrochemical oxidation is costly and technically complex. Hence, the possibility of depositing protective films on Al and its alloys by treating them in water at high pressure and temperature is of interest. Tests served to establish that distilled water oxidation can be employed to obtain protective films on magnalium. The protective quality index of such films, evaluated by spot test methods, was 50% lower than the index of films deposited by standard anodic oxidation. Films with peak protective qualities can be deposited on magnalium in distilled water by exposure for 5 hrs. at 100C, 2 hrs. at 150C or 1 hr. at 200C. Filling by boiling for 10 min. in a 3% solution of water-glass improves by 50 - 100% the protective quality indices of films deposited by exposures of not less than 2 hrs. at 150C or 1 hr. at 200C. The thickness of the forming oxide film can be increased 50 - 100% by adding triethanolamine to the water, but the corrosion inhibiting qualities of the film deteriorate at the same time. Bibl. with 6 titles.

SUB CODE: MM, FP

ENCL: 00

Card 2/2

L 33524-65 EWG(j)/EPA(s)-2/EWP(e)/EWT(n)/EPF(c)/EPF(n)-2/EWA(d)/EPR/EPA(w)-2/
EWP(t)/EPA(bb)-2/EWP(b) Pr-4/Ps-4/Pt-10/Pu-4/Pab-10 IJP(c) WW/MJW/JD/NB/NH
ACCESSION NR: AR5005705 S/0276/64/000/010/B081/B081

SOURCE: Ref. zh. Tekhnol. mashinostr. Sv. t., Abs. 10B549

AUTHOR: Shreyder, A. V.; Degtyareva, G. D.

TITLE: Corrosion of magnalium at high temperatures and the protective effect of an anodic oxide coating

CITED SOURCE: Tr. Gos. n. i proyekt. in-t neft. mashinostr., vyp. 2, 1964, 83-90

TOPIC TAGS: magnalium, high temperature corrosion, anodic oxidation, oxide protective property

TRANSLATION: The results of corrosion resistance tests on anodized samples of magnalium (alloy AMg5 with 4.8% Mg) are presented. It was shown that high temperature corrosion of magnalium in air represents a process attenuating in time up to 450C, inclusive. When heated in air, anodic oxide coatings are subject to dehydration and cracking as a result of successively occurring structural conversions, i. e. hydrargillite (bayerite) to boehmite, to leached boehmite, to amorphous alumina, to crystalline Al_2O_3 . The ability of an anodic oxide coating to protect against atmospheric corrosion at normal temperatures deteriorates increasingly as temperature and exposure period are

Card 1/2

L 33524-65

ACCESSION NR: AR5005705

increased when anodized magnalium is heated in air. Fissures resulting from dehydration and cracking of anodic oxide films are "healed" by high temperature oxidation taking place when the material is heated in air. Anodic oxide coatings maintain their protective properties against high temperature oxidation up to the melting point for magnalium.

SUB CODE: MM

ENCL: 00

Card 2/2

DIYAKOV, V.G., kand.tekhn.nauk; SHREYDER, A.V., kand.tekhn.nauk; ZAKHAROV, L.D., inzh.

Basic trends in controlling the corrosion of petroleum refinery equipment. Khim.i نفت. mashinostr. no.8:4-5 Ag '65.
(MIRA 18:12)

SHREYDER, A.V., kand.tekhn.nauk; SHPARBER, I.S., inzh.; ZHUK, N.P., doktor
tekhn.nauk

Corrosive exfoliation of metals of petroleum-refinery low
temperature equipment. Khim. i nef. mashinostr. no.9:28-32
S '65. (MIRA 18:10)

CHEREPAKOVA, G.I.; KILINOV, I.Ya.; SHREYDER, A.V.

Corrosion resistance of aluminum alloys in the condenser
refrigerating equipment of petrochemical industries.

Trudy MIKHM 23:117-126 1964.

(MIRA 19:1)

L 06084-67 EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/WB/JH

SOURCE CODE: UR/0314/66/000/006/0023/0026

ACC NR: AP6028095

(N)

AUTHOR: Cherepaknova, G. L. (Engineer); Shreyder, A. V. (Candidate of technical sciences); Klinov, I. Ya. (Doctor of technical sciences)

ORG: none

TITLE: Effect of the composition of the cooling water on the corrosion resistance of AMg alloy under the working conditions of condensers in oil refining plants

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 6, 1966, 23-26

TOPIC TAGS: corrosion resistance, magnesium containing alloy, manganese containing alloy

ABSTRACT: For the purposes of the tests a synthetic fresh water was prepared, with the following composition: 116 mg/liter NaCl; 49 mg/liter Na₂S; 2740 mg/liter Na₂SO₄·10 H₂O; 10 mg/liter Fe₂(SO₄)₃·9H₂O; 266 mg/liter MgSO₄·7H₂O; 516 mg/liter CaSO₄·2H₂O; 336 mg/liter NaHCO₃. The permissible content of CuCl₂ was up to 1 mg/liter. The pH was 6.5 in chloride solutions, 6.7-6.9 in sulfate solutions, 8.1-8.9 in bicarbonate solutions, and 8.2-9.3 in sulfide solutions. The pH practically did not change during the corrosion tests. The corrosion tests were carried out on samples of AMg alloy (2.4% Mg, 0.4% Mn) at temperatures of 20 and 45°C which corresponds to the actual operating temperatures of condenser tubes. The duration of the tests was 360

Card 1/2

UDC: 620.193:665.55.001.5

L 06084-67

ACC NR: AF6028095

3

hours. It was found that the weight loss of AMg alloy increases somewhat with an increase of the chloride content in the distilled water; with an increase in temperature from 20 to 45°C, the loss increases by 10 times and more. The greatest weight loss was observed in sulfide solutions at a temperature of 45°C. Detailed results are shown in a series of figures and tables. However, analysis of sludges from condensers indicates that these sludges contain up to 8.46% iron. This indicates that the main reason for the corrosion of condenser tubes is a high content of iron ions in the cooling water; this iron is a result of the corrosion of the tubes themselves. Orig. art. has: 2 figures and 1 table.

SUB CODE: 07, 11/ SUBM DATE: none/ ORIG REF: 004

Card 2/2 *en/2*

SHREYDER, G.K.

✓ 3237. PROTECTION OF STEEL FROM HYDROGEN SULPHIDE CORROSION. [unclear]
 V.D. Shreyder, G.K. and Gankiyon L.A. (Trud. Mosk. Nauch. Inst. (Prod.
 Histo. Tekhnol. Inst.), 1953, (12), 251-254; Abstr. in Ref. Zh. Khim. (Met. J.
 Chem., Moscow), 1955, (16), 36408). Samples of Soviet St. 3 steel, coated with
 aluminum and anodized were three times as resistant to corrosion at 600°C as
 the same steel uncoated, and twice as resistant as the same steel with an
 unanodized coating.

②
 2/2

SHREYDER, K.F.

Calculating $\frac{d^2g}{dz^2}$ as an example of the use of VK-type computers.
Geofiz. razved. no.6:42-47 '61. (MIRA 15:4)
(Gravity prospecting) (Electronic calculating machines)

SHREYDER, M. N., Engineer

"Investigation of Operational Indexes of Flax-Combine LK-7 and of Problems of Flax-Harvesting Technology." Sub 26 Jun 51, Moscow Inst of Mechanization and Electrification of Agriculture imeni V. M. Molotov

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

ZUBKOVA, P. P., FAL'KO, O. S.,
SHREYDER, M. N.

Flax

Decisively introduce progressive techniques into combine flax. Dost. sel'khoz. no. 8, 1952

Monthly List of Russian Accessions. Library of Congress. November 1952. UNCLASSIFIED.

ZUBKOVA, P., SHREYDER, M.

Machine-Tractor Stations

Petroleum economy at the Matveevo-Kurgan MTS. MTS 12 no. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, August, 1952. UNCLASSIFIED.

SHREYDER, M.N., kandidat tekhnicheskikh nauk.

Flax head conveyor. Tekst. prom. 15 no.11:18-19 N '55. (MLRA 9:1)

(Conveying machinery) (Flax)

SHREYDER, M.N.

SHREYDER, Mikhail Nikolayevich; NIKITINA, V.M., red.; ZUBRILINA, Z.P.,
tekhn. red.

[Mechanization of flax harvesting] Mekhanizatsiya uborki l'na.
Moskva, Gos.izd-vo sel'khoz. lit-ry, 1957. 87 p. (MIRA 11:2)
(Flax--Harvesting)

SHREYDER, M.N., kand.tekhn.nauk

Possibility of the introduction of machinery for the continuous harvesting of flax. Mekh. i elek. sots. sel'khoz. 19 no.6:16-20 '61.
(MIRA 14:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut l'na.
(Flax--Harvesting)

SHREYDER, M.N., kand.tekhn.nauk; FEDYUKOV, M.F., kand.tekhn.nauk; VLASOVA,
M.N., inzh.

Testing of the ML-2,8 flax thresher. Trakt. i sel'khoz mash.
32 no.5:18-20 My '62. (MIRA 15:5)
(Flax processing machinery)

SHREYDER, N. D.

Shreyder, N. D. - "The problem on psychic disturbances in hypertension," Trudy Tsentr. in-ta psikhiiatrii, Vol. IV, 1949, p. 135-45

SO: U-4934, 29 Oct 53, (Istopis 'Zhurnal 'nykh Statey, No. 16, 1949).

KHANLARYAN, G.M.; SHREYDER, N.N.

Clinical observations on mental patients treated with reserpine. Zhur.
nevr. i psikh. 59 no.5:581-585 '59. (MIRA 12:7)

1. Moskovskaya oblastnaya psikhonevrologicheskaya bol'nitsa No.1
(glavnyy vrach G.M. Khanlaryan).

(RESERPINE, ther. use,
ment. disord. (Rus))

(MENTAL DISORDERS, ther.
reserpine (Rus))

SHREYDER, S.N.

DECEASED
1878 - 1948

1961/2

SEE ILC

MATHENMATICS

ANTONOV, V.I., kand.tekhn.nauk; SHREYDER, V.A., inzh.

Use of plastic drainage pipes. Gidr. i mel. 13 no.8:29-37
Ag '61. (MIRA 14:8)

1. Meshcherskaya zonal'naya opytno-meliorativnaya stantsiya.
(Drainage) (Pipe, Plastic)

SHREYDER, V.A., kand. tekhn. nauk

Filters for drain pipes. Gidr. i mel. 17 no.11:50-55 N '65.
(MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidro-
tekhniki i melioratsii im. Kostyakova.